

Remarks

Claims 1-93 were pending in this application. Claims 2 and 16-93 have been cancelled without prejudice. Claims 1, 3, and 4 have been amended. Accordingly, claims 1 and 3-15 remain in this application.

Rejections Under 35 U.S.C. § 103

Ingram and Uchiyama

Claims 1-27 and 90-93 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,866,177 ("Ingram") in view of U.S. Patent No. 5,950,531 ("Uchiyama"). The Examiner asserts that Ingram discloses a linear bearing (26, 28, 30) guiding upper actuators (34) to move mold blocks or tool holder (44) along the slide shaft (24) carrying mold cores (46). However, the Examiner admits that Ingram fails to disclose a rail and turns to Uchiyama for disclosing a rail 28a and a plurality of guide rollers (30b, 32). Applicants respectfully traverse this rejection.

Ingram is directed to a compression molding apparatus 10 having a turret 12 that supports compression mold tooling, in which turret 12 rotates about an axis 14. (*Ingram* at col. 3, ll. 54-57.) An upper tooling assembly includes an upper actuator 34 that carries a roller 40, which, in cooperation with upper lift cam 42, lifts actuator 34 and tooling assembly upwardly to release molded parts. (*Id.* at col. 3, l. 63 to col. 4, line 4.) Upper actuator 34 further carries an upper tool holder 44 having an array of mold cores 46 that form the male portion of the compression mold cavity. (*Id.* at col. 4, ll. 4-9.)

An array of slide shafts 24 parallel to axis 14 fits through slide bearings 26, 28, 30 that are carried by turret plates 18, 20, 22, respectively. (*Id.* at col. 3, ll. 60-63). The upper actuator 34 is affixed to slide shaft 24 on opposite axial sides of upper turret plate 18. (*Id.* at col. 3, ll. 63-65.) In opposition to upper tooling assembly 32 is lower tooling assembly 50 has a slide 52 that slidably engages shaft 24 between turret plates 20 and 22. (*Id.* at col. 4, ll. 14-17.) A cavity bracket 56 on each slide 52 carries cavity holders 58 that form female mold sections that oppose mold cores 46 of upper tool assembly 32. (*Id.* at col. 4, ll. 17-22.)

Applicants respectfully submits that one of ordinary skill in the art would not combine the teachings of Ingram, directed to a compression molding apparatus, with that of Uchiyama. Uchiyama is directed to an electric press machine for press working on a lead frame. (*Uchiyama* at col. 1, ll. 6-9.) This is relevant for semiconductor devices of a resin mold type that are subjected to dambar cutting and lead forming by a press machine having a press die. (*Id.* at col. 1, ll. 15-19.) The press machine of Uchiyama is shown in FIGs. 11 and 12, of which the press section 2, cited by the Examiner, is described in FIG. 10. The press section 2 is driven by an electric motor associated with press section 2 through a timing belt 7 looped around a motor pulley 1a. (*Id.* at col. 8, ll. 34-44.)

More specifically, press section 2 comprises an upper die 13 and a lower die 20. (*Id.* at col. 9, ll. 10-25.) Upper die 13 drives a press ram 10 that vertically moves a punch holder 15, which holds a punch 16. (*Id.* at col. 9, ll. 16-18.) Lower die 20 has a press head 21 upon which is positioned a die holder 22 holding a die 23. (*Id.* at col. 9, ll. 25-29.) A feed plate 24, which is movable, is disposed above die 23 and is coupled to a lower-die support post 25, which stands from the die holder 22. (*Id.* at col. 9, ll. 29-34.) A coil spring 26 urges the feed plate 24 upward. (*Id.* at col. 9, ll. 34-36.) A guide post 27 is disposed between the punch 15 and the die holder 22 and positions and aligns the upper and lower dies 13 and 23. (*Id.* at col. 9, ll. 37-45.)

A rail 28a, alleged by the Examiner to work in conjunction with the guide post 27, is shown in FIG. 9 to be contained in the feeding mechanism 4. However, the feeding mechanism 4 (containing rail 28a) is positioned in an entirely separate location from the press section 2, which contains the guide post 27 (see FIG. 11). Because of this separation of the guide post 27 from the rail 28a, there is no suggestion in Uchiyama to position an additional rail in conjunction with a guide post, as asserted by the Examiner.

Moreover, there is no disclosure in Uchiyama of compression molding the types of articles described by Ingram, which would be appreciated by one of ordinary skill in the art to require different pressures for compressing compared to the semiconductor devices formed by the press machine of Ingram. Uchiyama's machine is driven by an electric motor and a pulley, whereas Ingram requires hydraulics to achieve the pressing.

Thus, one of ordinary skill in the art would not readily substitute one design for the other in light of the entirely different uses and articles formed by the respective Ingram and Uchiyama machines.

Nonetheless, to expedite prosecution, claim 1 has been amended to incorporate the limitations of claim 2, which recites a plurality of balls carried by the block, wherein the rail includes a track in which the balls are partially received. Neither Ingram nor Uchiyama, whether alone or in combination, teach or suggest balls received by a track in the rail. This embodiment provides an advantage over the art that requires bushings and bearings for sliding movement of mold tooling and a defined clearance to receive a lubricant to facilitate movement, in addition to the resulting wear, requiring additional lubrication and increased maintenance. (Specification at p. 1, l. 25 to p. 2, l. 9.)

Applicant respectfully submits that a *prima facie* case of obviousness has not been established, as one of ordinary skill in the art would not have combined the teachings of Ingram and Uchiyama. Accordingly, Applicant respectfully requests withdrawal of this rejection.

Ingram and Seger

Claims 28-31 and 46-68 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ingram in view of U.S. Patent No. 6,572,356 ("Seger"). Although Applicants respectfully disagree that claims 28-31 and 46-68 are unpatentable over Ingram and Seger, claims 28-31 and 46-68 have been cancelled without prejudice for the sole purpose of expediting prosecution. Accordingly, the rejection over Ingram and Seger is moot.

Reconsideration

It is believed that all claims of the present application are now in condition for allowance.

Reconsideration of this application is respectfully requested. If the Examiner believes that a teleconference would expedite prosecution of the present application the

Examiner is invited to call the Applicant's undersigned attorney at the Examiner's earliest convenience.

Any amendments or cancellation or submissions with respect to the claims herein is made without prejudice and is not an admission that said canceled or amended or otherwise affected subject matter is not patentable. Applicant reserves the right to pursue canceled or amended subject matter in one or more continuation, divisional or continuation-in-part applications.

To the extent that Applicant has not addressed one or more assertions of the Examiner because the foregoing response is sufficient, this is not an admission by Applicant as to the accuracy of such assertions.

Please grant any extensions of time required to enter this response and charge any fees in addition to fees submitted herewith that may be required to enter/allow this response and any accompanying papers to our deposit account 02-3038 and credit any overpayments thereto.

Respectfully submitted,

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